DOCUMENT RESUME

ED 341 020 CS 010 791

AUTHOR Dillon, Connie L.
TITLE Reading and Technology: Viable Partners for Multiple Educational Settings: Telecommunications and Reading Instruction.
PUB DATE Oct 91
NOTE 10p.; Paper presented at the College Reading Association Conference (35th, Crystal City, VA, October 31-November 3, 1991).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; *Educational Media; Elementary Secondary Education; *Learner Controlled Instruction; Post Secondary Education; *Reading Instruction; Technological Advancement; *Telecommunications
IDENTIFIERS Educational Native American Network; Oklahoma State University

ABSTRACT

The predominant telecommunications technologies, video and computer-based telecommunications, have multiple applications for reading education. The telecomputers of tomorrow will process, store, create and transmit images which can be distributed via fiber optics networks in a manner similar to the voice communications of today. Thus, the capabilities of today's video and computer telecommunications technologies will be combined into a single technology. The question is how best to use it in a given situation. Designing instruction which is accessible, which makes learning a concrete experience, which provides an interactive learning environment, and which encourages learner control are important features of reading education in a society in which literacy is a national concern. Video-based telecommunications which have potential applications for reading education are satellite, broadcast, and cable. Such facilities are accessible and their concreteness facilitates the association process required for verbal learning. Their only drawback is the lack of interactivity. Commuter mediated communications such as E-mail, bulletin boards, conferencing, and file transfer are becoming increasingly accessible and interactive, but lack the concreteness of the video-based technologies. Oklahoma State University's Arts and Science Teleconference Network, for example, offers a series of satellite teleconferences on remedial reading, targeting middle school and elementary students. The Whole Language Network for teachers on the Educational Native American Network (ENAN) is an example of a computer network which is used to share curriculum materials and ideas. (One appendix of telecommunications resources is attached.) (PRA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED341020

Reading and Technology:
Viable Partners for Multiple Educational Settings

Telecommunications and Reading Instruction

by

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Connie Dillon

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Connie L. Dillon
Assistant Professor and Kellogg Research Associate

A paper presentation for the
Thirty-Fifth College Reading Association

Literacy Research and Practice:
Foundations for the Year 2000

Oct. 31 - Nov. 3, 1991

CS010791

BEST COPY AVAILABLE

Telecommunications and Reading Instruction

Introduction

This presentation describes the predominant telecommunications technologies, specifically the video and computer-based telecommunications to include an analysis of the attributes of each, and a description of some of the potential applications for reading education.

The units for analysis represent three important features of instruction: access, interactivity, and concreteness. First, to be effective, education must first be accessible. Second, the concreteness of pictures, as opposed to the abstraction of words or numbers is important for specific learning outcomes including verbal learning and recall. Concrete examples also support the transfer of prior learning to realistic situations and can also promote learner awareness, stimulate interest, and enhance the motivation necessary to seek out and continue learning opportunities (Schramm 1977). Finally, the interactive capabilities of the technologies may be the most important features, as it is interaction through which learners clarify misunderstandings, receive feedback on assignments, discuss and debate issues and engage in problem solving activities (Moore, 1988). Interaction is also the attribute which enables learners to exercise control over the learning process, thus providing the learner with the opportunity to tailor the instruction to individual needs through access to instructor and learner support systems .

Video-Based Telecommunications

Access. The video-based telecommunications technologies include satellite, broadcast, and cable and are uniquely accessible, often eliminating both time and distance barriers. Broadcast television is available in nearly every home, satellite dishes are available in most communities, and cable television is common except in the most remote areas.

Concreteness. Likewise, one of the distinct advantages of video-based telecommunications is concreteness. The video technologies offer multimodal presentation since information can be presented in any of three modes including digital (words or numbers), iconic (pictures), or analogue (music or sound). Concreteness facilitates the association process required for verbal learning, offers learners with the opportunity to mentally apply learning to new situations by presenting simulations of real life events, and provides for the simultaneous presentation of words, pictures and sound enhancing recall.

Interactivity. However, a drawback of the video-based telecommunications is a lack of interactivity (Garrison, 1989). Interaction is either nonexistent or available in a very limited form, such as that which can occur via a dedicated telephone line or an 800 number. Telephone interaction is limited because it tends to promote directed questioning at the expense of the dialogue and conversation needed to personalize the content to the unique needs of the learner. Likewise, a "call-in" can be threatening, especially for the adult who is concerned with admitting to a literacy problem. Thus much of the attention to the design of video-based telecommunications should be placed upon designing for interactivity.

Computer Mediated Communications

Computer mediated communications (CMC) provides for communications among individual and/or groups using computers. The five capabilities of computer mediated communications are:

E-mail - provides communication among users. Messages can be sent to individual users, groups of users (scatter mail) or all users;

Bulletin Board - posting information for all or selected users;

On-line - surveying and testing of users;

Conferencing - synchronous or asynchronous conferencing capabilities;

File Transfer - uploading and downloading data files;

Computer mediated communications (CMC) is an emerging technology and research relative to the application of CMC in reading instruction is scant. However, an examination of the capabilities of CMC can give guidance to the application and design of CMC systems for reading programs and support the development of a research agenda.

Access. The equipment needed includes a computer or terminal, a modem, communications software, and a telephone line. The use of CMC requires access to a network and may involve long distance telephone charges. Many networks are emerging in a variety of areas, so access to networks is high. (Some of these have been listed in Appendix B). However, access to the equipment is highly variable, both in homes and public institutions.

Concreteness. Currently the concreteness of computer technology is relatively low, relying upon the written word and computer graphics. Instruction requiring motion and realistic visualization will likely require a supplementary delivery system at this time.

Interactivity. The strength of CMC is interactivity and the capability for both learner and teacher control. Once a network has been established it is very simple to adapt it to a myriad of uses. Unlike video-based technologies, which are highly production oriented, CMC activities can be initiated by any participant. Nor does CMC require a mass market to make these systems cost effective. CMC also allows for considerable anonymity, which may be an advantage to certain learner groups. Finally, individuals can communicate asynchronously, so that participants need not be either time or place bound.

Video-Based Telecommunications in Practice

Examples reading instruction using broadcast, cable, and satellite telecommunications technologies are found in programs for both adult and K-12 populations. (See Appendix for more information about these programs).

The North Carolina Agency for Public Telecommunications (APT), a state government agency, distributes interactive programs targeting the adult basic education student statewide through local cable networks and nationally via satellite. The design of these programs emphasizes two important features related to learner control, an "experiential based" content and personalized telephone contact. According to Dr. Carol Tyler, originator and host, "the greatest use of television comes in the form of educating the viewer regarding their own potential as a learner and for information referral." (Personal

Communication, July 5, 1990). These factors have made the series an effective example of designing the mass media for the ABE student.

The National Captioning Institute (NCI) provides a special decoder which can be used in conjunction with conventional television programming, enabling the viewer to read and hear the dialogue. Nearly 400 hours of programming are available weekly through ABC, CBS, NBC, PBS and the Fox Television Network. The home television provides a nonthreatening, comfortable environment in which to practice literacy skills, making the NCI option an important resource for ABE programs.

Oklahoma State University's Arts and Science Teleconference Network offers a series of satellite teleconferences on remedial reading targeting middle school and elementary students. The series was originally designed for students who are reading at the 5th grade level, but often high school students participate. The course is offered on the air two days a week for 45 minutes and during the other three days a week the students work on assigned activities. A teacher certified in language arts is present in the classroom with the students at the distant sites. Both teachers and students can call in on an 800 number during the telecast or at any other time. The students, are mostly racial or ethnic minority, work with real problems using computer programs and a text which stresses life skills ranging from reading medicine bottle labels and writing letters about their vacations. Because the series targets at-risk students, it is designed to enhance motivation by using rapid pacing, frequent change in strategies, live on-air interaction with students, and uses student role models in the programming when possible. The course utilizes self-esteem building features. For instance, the students create their own schedules, use peer evaluation, and the teacher in the classroom becomes a mentor.

Computer Mediated Telecommunications in Practice

CMC is used to supplement existing instruction, offers a vehicle for offering entire courses, and provides a network linking administrators, teachers and students.

In composition classes, students use CMC to share and critique writing projects, to explore potential topics, and as a support for networking. CMC provides students with the opportunity to get continuing feedback from many more people, engage in more in-depth discussion that in a typical class period, and engage in associative thinking (Kowalski, 1989).

Teachers use computer networks for interaction and resource sharing. For instance, the Whole Language Network for teachers on the Educational Native American Network (ENAN) is used to share curriculum materials and ideas. Teachers also participate in abstracting networks in which each participant abstracts and shares interesting articles with others on the network.

Several entire courses are offered via computer networks. One course in group performance skills offered at a university entirely using computer mediated communications enabled instructors to monitor the development of discussion skills across twice as many students than in the traditional face-to-face mode with a very high level of students satisfaction (Phillips, et. al., 1988). A noncredit course on AIDs offered via CMC from Northern Arizona University offers participants with the opportunity to engage in sensitive discussion with assurance of complete anomymity.

Publishing journals and newsletters on a computer network provides students with the opportunity to engage in writing, reading, and critique of writing activities. The

communication with peers and a variety of guest speakers in other locations is a very motivating activity which encourages the development of effective communications skills.

Summary

Computers are becoming more like television and television is becoming more like computers. Gilder (1991) describes a new generation of computers as smart televisions, or telecomputers. The telecomputers of tomorrow will process, store, create and transmit images which can be distributed via fiber optics networks in a manner similar to the voice communications of today. Thus, the capabilities of today's video and computer telecommunications technologies will be combined into a single technology.

Access will not be determined by the technology but rather by political and financial issues. Likewise, the technology will not ensure effective instruction. Regardless of the technological resources available, the question we must answer is not whether to use the technologies we have, but rather, how best to use them in a given situation. Designing instruction which is accessible, which makes learning a concrete experience, which provides an interactive learning environment, and which encourages learner control are important features of reading education in a society in which literacy is a national concern.

References

Garrison, D.R. 1989. Understanding Distance Education. London: Routledge.

Gilder, G. 1991. Now or never. Forbes, October 14.

Kowalski, R. 1989. Computer CONFERencing in the English Composition Classroom. Educational Technology, 29 (4) 28-34.

Moore, M. 1989. Three Types of Interaction. The American Journal of Distance Education, 3 (2), 1-6.

Phillips, G.M., Santoro, G.M., & Kuehn, S.A. The use of computer-mediated communication in training students in group problem-solving and decision-making techniques. The American Journal of Distance Education, 2(1), 38-51.

Schramm, W. 1977. The researcher and the producer in ETV. Public Telecommunications Review, July/August, 11-21.

Appendix

Telecommunications Resources

Books

Harasim, L.M. (Ed). 1990. On-line Education: Perspectives On a New Environment, Praeger.

National School Board Association. 1988. Two-Way Interactive Television for Distance Learning: A Primer, Contact: NSBA, 1680 Duke St., Alexandria VA 22314 (703)838-6722.

U.S. Congress, Office of Technology Assessment. 1989. Linking for Learning: A New Course for Education, OTA-SET-430, Washington, D.C.: U.S. Government Printing Office.

Journals

American Journal of Distance Education, Pennsylvania State University, Office for Distance Education, 403 South Allen Street, Room 265, University Park PA 16802, 814-863-3764.

Educational Technology, 720 Palisade Ave., Englewood Cliffs, NJ, 07632.

Learning by Satellite Newsline, Arts & Sciences Extension, 206 LSE, Oklahoma State University, Stillwater, OK 74078.

T.H.E. Journal, (Technological Horizons in Education). Information Synergy Inc., 2626 S. Pullman, Santa Anna CA 92705.

Conferences

Conference on Distance Teaching/Learning, Continuing & Vocational Education, University of Wisconsin-Madison, 225 North Mills Street, Madison, WI 53706.

Learning by Satellite, Oklahoma State University, Learning by Satellite V, 205 Life Sciences East, Stillwater OK 74078-0276.

Video-Based Programming

Arts and Sciences Teleconferencing Service (ASTS)
Contact: Missie Murnan, ASTS, Oklahoma State University, 401 Life Sciences East, Stillwater, OK 74078 (405)744-7895.

Whittle Communications
Contact: Whittle Communications, 505 Market Street, Knoxville TN 37902, (615) 595-5100

C-Span in the Classroom
Contact: Linda Heller, Director of Educational Services, C-Span, 444 North Capitol St.,NW, Washington, DC 20001 (800) 523-7586 or (202) 737-3220

Education Satellite Network (ESN)
Contact: Betty McCarthy, Missouri School Boards Assoc., 2100 1-70 Drive S.W., Columbia, MO 65203 (314) 445-9920.

The Learning Channel
Contact: Molly Breeden, Assistant Director of Educational Services, The Learning Channel, 1525 Wilson Blvd., Suite 550, Rosslyn VA 22209, (800) 346-0032

Midlands Consortium
Contact: Midlands Consortium Star Schools Project, Oklahoma State University, 309 North Cordell, Stillwater OK 74078; (405) 744-8131

Satellite Educational Resources Consortium (SERC)
Contact: Gail Arnall, Satellite Educational Resources Consortium, POB 160, Oxen Hill MD 20745; (301) 839-8025

Satellite Telecommunications Educational Programming (STEP)
Contact: Educational Services District 101, West 1025 Indiana, Spokane, WA 99205.
Ted Roscher (505) 456-7660

Technical Education Research Centers (TERC).
Contact: Cecilia Link, Director, Technical Education Research Centers, 1696 Massachusetts Ave., Cambridge MA 02138, 617-546-0430.

TI-IN United Star Network
Contact: Pam Pease, Director, TI-IN United Star Network, 1000 Central Parkway North, Suite 190, San Antonio TX; (512) 490-3900

National Captioning Institute
Contact: The National Captioning Institute, Department LDSK, 5203 Leesburg Pike, Falls Church VA 22041, (703) 998-2400

North Carolina Agency for Public Telecommunications
Contact: Ivy Hoffman, Assistant Director, Agency for Public Telecommunications, 116 West Jones St., Raleigh NC 27603-8003; (919) 733-6341.

Computer Networks

AT&T Long Distance Learning Network
Contact: AT&T Long Distance Learning Network, P.O. Box 716, Basking Ridge NJ 07920-0716; (800) 367-7225 ext. 4158

Computer Pals Across the World
Contact: Jim Erwin, Founder & USA Coordinator, 4974 SW Galen, Lake Oswego OR 97035

Dialog Classmate
Contact: Dialog Information Services, Inc., 3460 Hillview Avenue, Palo Alto CA 94304; (800)334-2564

Dialog CIP
Contact: Dialog Information Services, Inc., 3460 Hillview Avenue, Palo Alto CA 94304; (800)334-2564

EDUNET
Contact: EDUNET, P.O. Box 9121, Helena, MT 59601; (406) 442-8090 ext. 42 or call the EDUNET computer at (406) 449-2503 and logon as "Stranger"

Einstein
Contact: Einstein Customer Service, Educational Broadcasting Corp, Learning Link, 356 W. 58th St. New York NY 10019

FrEdMail
Contact: Al Rogers, 4021 Allen School Road, Bonita CA 92002; Compuserve 76167,3514

KIDSNET
Contact: ALANET (800) 545-2433 or KIDSNET, 6856 Eastern Ave NW, Suite 208, Washington DC, (202) 291-1400

National Geographic Kids Network
Contact: Dorothy Perreca, National Geographic Kids Network, National Geographic, Washington DC 20036; (202) 775-6580